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NEWS 9 JAN 13 IPC 8 searching in IFIPAT, IFIUDB, and IFICDB
NEWS 10 JAN 13 New IPC 8 SEARCH, DISPLAY, and SELECT enhancements added to
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NEWS 11 JAN 17 Pre-1988 INPI data added to MARPAT
NEWS 12 JAN 17 IPC 8 in the WPI family of databases including WPIFV
NEWS 13 JAN 30 Saved answer limit increased
NEWS 14 JAN 31 Monthly current-awareness alert (SDI) frequency
added to TULSA

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ENTRY SESSION
0.21 0.21

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=> ribosome (w) inactivating (w) protein
L1 3699 RIBOSOME (W) INACTIVATING (W) PROTEIN

=> review and l1
L2 171 REVIEW AND L1

=> heteromeric and l2
L3 0 HETEROMERIC AND L2

=> t ti l2 1-50

L2 ANSWER 1 OF 171 MEDLINE on STN
TI Recent advances in trichosanthin, a **ribosome-**
 inactivating protein with multiple pharmacological
 properties.

L2 ANSWER 2 OF 171 MEDLINE on STN
TI Ricin: the endoplasmic reticulum connection.

L2 ANSWER 3 OF 171 MEDLINE on STN
TI Cinnamomin--a versatile type II **ribosome-inactivating**
 protein.

L2 ANSWER 4 OF 171 MEDLINE on STN
TI Ribosome-inactivating proteins: entry into mammalian cells and
 intracellular routing.

L2 ANSWER 5 OF 171 MEDLINE on STN
TI Cinnamomin: a multifunctional type II **ribosome-**
 inactivating protein.

L2 ANSWER 6 OF 171 MEDLINE on STN
TI Mistletoe extracts standardised in terms of mistletoe lectins (ML I) in
 oncology: current state of clinical research.

L2 ANSWER 7 OF 171 MEDLINE on STN
TI Mistletoe extracts standardized to mistletoe lectins in oncology:
 review on current status of preclinical research.

L2 ANSWER 8 OF 171 MEDLINE on STN
TI Ribosome-inactivating proteins from plants: more than RNA N-glycosidases?.

L2 ANSWER 9 OF 171 MEDLINE on STN

TI Mistletoe (viscum album) lectins as cytokine inducers and immunoadjuvant in tumor therapy. A **review**.

L2 ANSWER 10 OF 171 MEDLINE on STN

TI Pokeweed antiviral protein: ribosome inactivation and therapeutic applications.

L2 ANSWER 11 OF 171 MEDLINE on STN

TI Mitotoxins: growth factor-targeted cytotoxic molecules.

L2 ANSWER 12 OF 171 MEDLINE on STN

TI Are lectins of Viscum album interesting tools in lung diseases? A **review** of recent results.

L2 ANSWER 13 OF 171 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN

TI Recent advances in trichosanthin, a **ribosome-inactivating protein** with multiple pharmacological properties.

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TI Immunotoxins and other conjugates: Preparation and general characteristics.

L2 ANSWER 15 OF 171 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN

TI Ribosome-inactivating proteins: Entry into mammalian cells and intracellular routing.

L2 ANSWER 16 OF 171 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN

TI Ribosome inactivating proteins and apoptosis.

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TI Ricin: the endoplasmic reticulum connection.

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TI Cinnamomin: A multifunctional type II **ribosome-inactivating protein**.

L2 ANSWER 19 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN

TI Ribosome-inactivating proteins in bitter gourd (Momordica charantia)

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TI Ribosome-inactivating proteins

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TI Recent advances in trichosanthin, a **ribosome-inactivating protein** with multiple pharmacological properties

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TI Ribosome inactivating proteins and apoptosis

L2 ANSWER 23 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN

TI Plant protein toxins: structure, function, and biotechnological applications

L2 ANSWER 24 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN

TI Cinnamomin - a versatile type II **ribosome-inactivating protein**

L2 ANSWER 25 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
 TI Ricin: the endoplasmic reticulum connection

L2 ANSWER 26 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
 TI Ribosome-inactivating proteins

L2 ANSWER 27 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
 TI Nigrin b: A **ribosome-inactivating protein** from elder. Pharmaceutical use in the construction of immunotoxins and conjugates for cancer therapy

L2 ANSWER 28 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
 TI Immunotoxins and other conjugates: Pre-clinical studies

L2 ANSWER 29 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
 TI Antiviral activity of Ribosome Inactivating Proteins in medicine

L2 ANSWER 30 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
 TI Cytotoxicity and toxicity to animals and humans of Ribosome-Inactivating Proteins

L2 ANSWER 31 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
 TI Ribosome-inactivating proteins: Entry into mammalian cells and intracellular routing

L2 ANSWER 32 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
 TI The genetics and properties of cereal Ribosome-Inactivating Proteins

L2 ANSWER 33 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
 TI Genetics of Ribosome-Inactivating Proteins

L2 ANSWER 34 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
 TI The structure of ribosome inactivating proteins

L2 ANSWER 35 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
 TI Description, distribution, activity and phylogenetic relationship of ribosome-inactivating proteins in plants, fungi and bacteria

L2 ANSWER 36 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
 TI Antifungal proteins: targets, mechanisms and prospective applications

L2 ANSWER 37 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
 TI Non-toxic type 2 ribosome-inactivating proteins (RIPs) from Sambucus: Occurrence, cellular and molecular activities and potential uses. [Erratum to document cited in CA139:361566]

L2 ANSWER 38 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
 TI Death receptor activation complexes. It takes two to activate TNF receptor 1

L2 ANSWER 39 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
 TI Applications of plant antiviral proteins

L2 ANSWER 40 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
 TI The "Fuzzy Logic" of the Death-Inducing Signaling Complex in Lymphocytes

L2 ANSWER 41 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
 TI Non-toxic type 2 ribosome-inactivating proteins (RIPs) from Sambucus: Occurrence, cellular and molecular activities and potential uses

L2 ANSWER 42 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
 TI Recent development of antitumor agents from chinese herbal medicines. Part II. High molecular compounds

L2 ANSWER 43 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
 TI Cinnamomin: a multifunctional type II **ribosome-inactivating protein**

L2 ANSWER 44 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
 TI Application of ribosome-inactivating proteins of Chinese herbs in biomedicine

L2 ANSWER 45 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
 TI Ribosome-inactivating proteins and its application in plant antifungal gene engineering

L2 ANSWER 46 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
 TI Proteolytic cleavage of molecules involved in cell death or survival pathways: A role in the control of apoptosis?

L2 ANSWER 47 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
 TI Highly efficient cell-free protein synthesis system prepared from wheat embryos

L2 ANSWER 48 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
 TI Liposomes containing plant ribosome-inactivating proteins

L2 ANSWER 49 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
 TI New information on signal transduction research in NF- κ B activation

L2 ANSWER 50 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
 TI **Review** of protein and polypeptide of Momordica charantia

=> d ibib abs 12 4

L2 ANSWER 4 OF 171 MEDLINE on STN
 ACCESSION NUMBER: 2004281546 MEDLINE
 DOCUMENT NUMBER: PubMed ID: 15180507
 TITLE: Ribosome-inactivating proteins: entry into mammalian cells and intracellular routing.
 AUTHOR: Roberts Lynne M; Lord J Michael
 CORPORATE SOURCE: Department of Biological Sciences, University of Warwick, Coventry, CV4 7AL, UK.. lynne-roberts@warwick.ac.uk
 SOURCE: Mini reviews in medicinal chemistry, (2004 Jun) 4 (5) 505-12. Ref: 97
 Journal code: 101094212. ISSN: 1389-5575.
 PUB. COUNTRY: Netherlands
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 General Review; (REVIEW)
 (REVIEW, TUTORIAL)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 200411
 ENTRY DATE: Entered STN: 20040608
 Last Updated on STN: 20041117
 Entered Medline: 20041116

AB To catalytically-modify ribosomes in vivo, ribosome-inactivating proteins produced by plants must enter susceptible mammalian cells in order to reach their substrates in the cytosol. This **review** primarily focuses on the biosynthesis, mechanism of cell entry and intracellular

trafficking of ricin, the most thoroughly studied **ribosome-inactivating protein** in this respect.

=> FIL STNGUIDE

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	27.92	28.13

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LAST RELOADED: Feb 10, 2006 (20060210/UP).

=> ribosome (w) inactivating (w) protein

0 RIBOSOME

0 INACTIVATING

5 PROTEIN

L4 0 RIBOSOME (W) INACTIVATING (W) PROTEIN

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FULL ESTIMATED COST	0.24	28.37

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L1 3699 RIBOSOME (W) INACTIVATING (W) PROTEIN

L2 171 REVIEW AND L1

L3 0 HETEROMERIC AND L2

L4 FILE 'STNGUIDE' ENTERED AT 17:34:52 ON 13 FEB 2006
0 RIBOSOME (W) INACTIVATING (W) PROTEIN

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=> subunit and l2

L5 7 SUBUNIT AND L2

=> Shiga and 12
L6 5 SHIGA AND L2

=> 15 and 16
L7 1 L5 AND L6

=> d ibib abs 17

L7 ANSWER 1 OF 1 EMBASE COPYRIGHT (c) 2006 Elsevier B.V. All rights reserved on STN

ACCESSION NUMBER: 2004368358 EMBASE

TITLE: Cytotoxic ribosome-inactivating lectins from plants.

AUTHOR: Hartley M.R.; Lord J.M.

CORPORATE SOURCE: M.R. Hartley, Department of Biological Sciences, University of Warwick, Gibbet Hill Rd., W. Midlands CV4 7AL, Coventry, United Kingdom. mhartley@bio.warwick.ac.uk

SOURCE: Biochimica et Biophysica Acta - Proteins and Proteomics, (1 Sep 2004) Vol. 1701, No. 1-2, pp. 1-14. .
Refs: 136

ISSN: 1570-9639 CODEN: BBAPBW

PUBLISHER IDENT.: S 1570-9639(04)00166-9

COUNTRY: Netherlands

DOCUMENT TYPE: Journal; General Review

FILE SEGMENT: 030 Pharmacology
037 Drug Literature Index

LANGUAGE: English

SUMMARY LANGUAGE: English

ENTRY DATE: Entered STN: 20040916

Last Updated on STN: 20040916

AB A class of heterodimeric plant proteins consisting of a carbohydrate-binding B-chain and an enzymatic A-chain which act on ribosomes to inhibit protein synthesis are amongst the most toxic substances known. The best known example of such a toxic lectin is ricin, produced by the seeds of the castor oil plant, *Ricinus communis*. For ricin to reach its substrate in the cytosol, it must be endocytosed, transported through the endomembrane system to reach the compartment from which it is translocated into the cytosol, and there avoid degradation making it possible for a few molecules to inactivate a large proportion of the ribosomes and hence kill the cell. Cell entry by ricin involves the following steps: (i) binding to cell-surface glycolipids and glycoproteins bearing β -1,4-linked galactose residues through the lectin activity of the B-chain (RTB); (ii) uptake by endocytosis and entry into early endosomes; (iii) transfer by vesicular transport to the trans-Golgi network; (iv) retrograde vesicular transport through the Golgi complex and into the endoplasmic reticulum (ER); (v) reduction of the disulfide bond connecting the A- and B-chains; (vi) a partial unfolding of the A-chain (RTA) to enable it to translocate across the ER membrane via the Sec61p translocon using the pathway normally followed by misfolded ER proteins for targeting to the ER-associated degradation (ERAD) machinery; (vi) refolding in the cytosol into a protease-resistant, enzymatically active structure; (vii) interaction with the sarcin-ricin domain (SRD) of the large ribosome **subunit** RNA followed by cleavage of a single N-glycosidic bond in the RNA to generate a depurinated, inactive ribosome. In addition to the highly specific action on ribosomes, ricin and related ribosome-inactivating proteins (RIPs) have a less specific action in vitro on DNA and RNA substrates releasing multiple adenine, and in some instances, guanine residues. This polynucleotide:adenosine glycosidase activity has been implicated in the general antiviral, and specifically, the anti HIV-1 activity of several single-chain RIPs which are homologous to the A-chains of the heterodimeric lectins. However, in the absence of clear cause and effect evidence in vivo, such claims should be regarded

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FULL ESTIMATED COST	0.30	43.06

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L2 171 REVIEW AND L1
L3 0 HETEROMERIC AND L2

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L4 0 RIBOSOME (W) INACTIVATING (W) PROTEIN

FILE 'MEDLINE, BIOSIS, CAPLUS, EMBASE, WPIDS' ENTERED AT 17:37:10 ON 13 FEB 2006

L5 7 SUBUNIT AND L2
L6 5 SHIGA AND L2
L7 1 L5 AND L6

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=> 15 or 16

L8 11 L5 OR L6

=> 18 not 17

L9 10 L8 NOT L7

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L9 ANSWER 1 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN

TI Molecular mechanism of action of ribotoxins

L9 ANSWER 2 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN

TI **Ribosome inactivating protein** and its
application in plant anti-fungal disease genetic engineering

L9 ANSWER 3 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN

TI The enemy within: ricin and plant cells

L9 ANSWER 4 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN

TI Jasmonates - secondary messengers in plant defense and stress reactions

L9 ANSWER 5 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN

TI Enzymic properties of ribosome-inactivating proteins (RIPs) and related
toxins

L9 ANSWER 6 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN

TI **Ribosome-inactivating protein** from plant

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TI Bacterial toxins: Potential weapons against HIV infection.

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TI Delivery into cells: Lessons learned from plant and bacterial toxins.

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TI Ribosome inactivating proteins and apoptosis.

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TI Cytotoxicity and toxicity to animals and humans of ribosome-inactivating
proteins.

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L9 ANSWER 1 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:214249 CAPLUS

DOCUMENT NUMBER: 134:204786

TITLE: Molecular mechanism of action of ribotoxins

AUTHOR(S): Sawasaki, Tatsuya; Endo, Yaeta

CORPORATE SOURCE: Fac. Eng., Ehime Univ., Japan

SOURCE: Tanpakushitsu Kakusan Koso (2001), 46(4,
3gatsuzokang), 355-362
CODEN: TAKKAJ; ISSN: 0039-9450

PUBLISHER: Kyoritsu Shuppan

DOCUMENT TYPE: Journal; General Review

LANGUAGE: Japanese

AB A **review** with 23 refs., on mol. mechanism of ribosome
inactivation by ribotoxins including α -sarcin and ricins, discussing
 α -sarcin as a RNase that specifically cleavages toxic domains of 28S

rRNA, modification of 28S rRNA by A chain of ricin and of other related toxins, such as **Shiga** toxin and verotoxin, as a RNA N-glycosidase, and structure and function of toxic domains of rRNA.

L9 ANSWER 2 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:189511 CAPLUS

DOCUMENT NUMBER: 135:43456

TITLE: **Ribosome inactivating protein** and its application in plant anti-fungal disease genetic engineering

AUTHOR(S): Shan, Li-bo; Xu, Jian

CORPORATE SOURCE: Institute of Genetics, Chinese Academy of Sciences, Beijing, 100101, Peop. Rep. China

SOURCE: Shengwu Gongcheng Jinzhan (2000), 20(6), 74-78
CODEN: SGJHA2; ISSN: 1003-3505

PUBLISHER: Zhongguo Kexueyuan Wenxian Qingbao Zhongxin

DOCUMENT TYPE: Journal; General Review

LANGUAGE: Chinese

AB A **review** with 52 refs. Fungal disease is one of main reasons on crop losses. At the same time, there are a lot of proteins inhibiting the fungal growth in vitro from plants, to which **ribosome inactivating protein** (RIP) belongs. It can specifically cleave the glycosidic bond of adenine from the rRNA of the large **subunit** and cause complete inactivation of the ribosome, hence inhibiting protein synthesis. But it can not inactivate "self" ribosomes, and only shows varying degrees of activity towards ribosomes of distantly related species, including fungal ribosomes, which indicates that it is a defensive agent whose principal function is probably antipathogens. By genetic engineering it can be effectively expressed in some economical crops and such engineered plants may be desirably antidisease, which is becoming a new way to protecting the plant against fungal disease because it avoids not only potentially harming to the environment causing by the application of agrochemicals. but also the time-consuming processes of conventional breeding. In the present study, we briefly and comprehensively elaborated its distribution, classification, biochem., structural, functional properties, effects on protein synthesis and its perspectives closely focusing on its roles in resistance to fungal disease.

L9 ANSWER 3 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1998:588860 CAPLUS

DOCUMENT NUMBER: 129:257645

TITLE: The enemy within: ricin and plant cells

AUTHOR(S): Frigerio, Lorenzo; Roberts, Lynne M.

CORPORATE SOURCE: Istituto Biosintesi Vegetali, Consiglio Nazionale delle Ricerche, Milan, 20133, Italy

SOURCE: Journal of Experimental Botany (1998), 49(326), 1473-1480
CODEN: JEBOA6; ISSN: 0022-0957

PUBLISHER: Oxford University Press

DOCUMENT TYPE: Journal; General Review

LANGUAGE: English

AB A **review** with 67 refs. Ricin, a **ribosome-inactivating protein** from the seeds of the castor oil plant (*Ricinus communis* L.) is one of the most potent cell poisons known. It is able to bind and enter most mammalian cells where it exploits their fully reversible secretory pathway to reach the endoplasmic reticulum. Ricin is then able to exit the endoplasmic reticulum to access the cytosol where it inhibits protein synthesis, thus killing the cells. Castor bean ribosomes are sensitive to ricin, but the plant has developed strategies to protect its own cells from suicide. The intracellular routing of ricin has been traditionally studied by exogenously adding toxin to mammalian

cells and by following its path through the cell. However, the extreme potency of this protein has prevented the final membrane transport step from being studied in detail. Now, the expression of ricin in heterologous plant cells is proving helpful in elucidating details of both toxin biosynthesis and vacuolar targeting, and in studying membrane translocation of the catalytic **subunit** from the endoplasmic reticulum to the cytosol.

REFERENCE COUNT: 67 THERE ARE 67 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 4 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1997:336782 CAPLUS

DOCUMENT NUMBER: 127:15395

TITLE: Jasmonates - secondary messengers in plant defense and stress reactions

AUTHOR(S): Reinbothe, Christiane; Reinbothe, Steffen

CORPORATE SOURCE: Institute of Plant Biochemistry, Halle/Saale, D-06120, Germany

SOURCE: Physical Stresses in Plants: Genes and Their Products for Tolerance, Proceedings of the Workshop on Genes and Their Products for Tolerance to Physical Stresses in Plants, Maratea, Italy, Sept. 24-27, 1995 (1996), Meeting Date 1995, 249-259. Editor(s): Grillo, Stefania; Leone, Antonella. Springer: Berlin, Germany.

CODEN: 64JRAU

DOCUMENT TYPE: Conference; General Review

LANGUAGE: English

AB A **review** and discussion with 46 refs. Jasmonates influence plant gene expression in a pleiotropic manner. Whether released in plants upon pathogen attack and stress treatment or applied externally, jasmonates induce numerous plant defense and stress proteins (JIPs) and simultaneously lower or even shut down the expression of photosynthetic genes, including those for the small **subunit** of ribulose-1,5-bisphosphate carboxylase/oxygenase (the *rbcS* gene product) and a light-harvesting chlorophyll a/b binding protein (the *lhb* gene product). The *jip* genes are rapidly transcriptionally activated, and the resulting *jip* transcripts are preferentially translated, as compared to *rbcS* and *lhb* mRNAs. However, *rbcS* and *lhb* transcripts are preserved in the nonpolysomal fraction in the early stage of the jasmonate response, presumably to potentially allow recovery of the cell from stress treatment or pathogen attack. Within the plastid compartment, early changes in transcript functionality, as discussed for *rbcL*, the mRNA encoding the large **subunit** of RuBisCo, appear to be superimposed on delayed jasmonate effects on plastid transcription and RNA stabilities. Amino acids released from the degradation of chloroplast proteins are used for cytoplasmic JIP formation. In the final stage of the jasmonate response, protein biosynthesis is irreversibly inactivated. The underlying mol. mechanism requires the induction of JIP60, which is a novel **ribosome-inactivating protein** and the specific marking of the plant ribosome. The coordinate interplay between JIP60 and its intracellular target, marked ribosomes, finally leads to localized cell death and thus may prevent the spread of bacteria, viruses and fungi beyond the site of infection.

L9 ANSWER 5 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1992:422162 CAPLUS

DOCUMENT NUMBER: 117:22162

TITLE: Enzymic properties of ribosome-inactivating proteins (RIPs) and related toxins

AUTHOR(S): Fong, W. P.; Wong, Ricky N. S.; Go, Thomas T. M.; Yeung, H. W.

CORPORATE SOURCE: Chin. Med. Mater. Res. Cent., Chin. Univ. Hong Kong,
Shatin, Hong Kong
SOURCE: Life Sciences (1991), 49(25), 1859-69
CODEN: LIFSAK; ISSN: 0024-3205
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English

AB A **review** with 90 refs. Ribosome-inactivating proteins (RIPs) are a group of proteins that inhibit protein synthesis in eukaryotic cells. While the biol. effects have been well characterized, the underlying enzymic mechanisms have not been elucidated until recently. Two different mechanisms have been identified. Plant and bacterial RIPs act as N-glycosidases. They cleave a single N-glycosidic bond between adenine and ribose at a specific nucleotide A-4324 of the 28 S rRNA of the 60 S ribosomal **subunit**. On the other hand, the fungal RIPs act as RNases and cleave a single phosphodiester bond between G-4325 and A-4326 of the same rRNA, just one nucleotide away from the site of action of plant/bacterial RIPs. Other protein synthesis inhibitory proteins act by their ADP-ribosyltransferase activity which modify and thus inactivate elongation factor-2. Recently, some toxins have been shown to possess DNase activity which may also account for their toxicity.

L9 ANSWER 6 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1987:633039 CAPLUS

DOCUMENT NUMBER: 107:233039

TITLE: **Ribosome-inactivating protein** from plant

AUTHOR(S): Funatsu, Gunki

CORPORATE SOURCE: Fac. Agric., Kyushu Univ., Fukuoka, 812, Japan

SOURCE: Kagaku to Seibutsu (1987), 25(10), 624-5

CODEN: KASEAA; ISSN: 0453-073X

DOCUMENT TYPE: Journal; General Review

LANGUAGE: Japanese

AB A **review**, with 8 refs., on **ribosome-inactivating protein** isolated from plants, including the action against the 60 S **subunit** of the ribosome and inhibition of virus proliferation.

L9 ANSWER 7 OF 10 EMBASE COPYRIGHT (c) 2006 Elsevier B.V. All rights reserved on STN

ACCESSION NUMBER: 2005338288 EMBASE

TITLE: Bacterial toxins: Potential weapons against HIV infection.

AUTHOR: Alfano M.; Rizzi C.; Corti D.; Adduce L.; Poli G.

CORPORATE SOURCE: M. Alfano, DIBIT, Via Olgettina 58, 20132 Milano, Italy.
massimo.alfano@hsr.it

SOURCE: Current Pharmaceutical Design, (2005) Vol. 11, No. 22, pp. 2909-2926. .

Refs: 302

ISSN: 1381-6128 CODEN: CPDEFP

COUNTRY: Netherlands

DOCUMENT TYPE: Journal; General Review

FILE SEGMENT: 004 Microbiology

026 Immunology, Serology and Transplantation

030 Pharmacology

037 Drug Literature Index

038 Adverse Reactions Titles

LANGUAGE: English

SUMMARY LANGUAGE: English

ENTRY DATE: Entered STN: 20050818

Last Updated on STN: 20050818

AB Natural toxins are the product of a long-term evolution, and have captured crucial events in the most essential and vital processes of living organisms. They can attack components of the protein synthesis machinery

(as in the case of Diphtheria and **Shiga** toxins, and Ribosome inactivating proteins), actin polymerization (Clostridium botulinum type C, C2, toxins and Enterotoxin A), signal transduction pathways (Cholera toxin, Heat-labile enterotoxins, Pertussis and Adenylate cyclase toxins), intracellular trafficking of vesicles (for Tetanus and Botulinum neurotoxin type C) as well as immune and/or inflammatory responses (Pyrogenic exotoxins, Cholera and Pertussis toxins). Of interest is the fact that several bacterial and vegetal toxins can either kill selectively cells infected with the human immunodeficiency virus (HIV) or exert inhibitory effects on its life cycle. In particular both pertussis toxin (PTX) and its nontoxic B-oligomeric component (PTX-B) can block the infectious process in vitro at multiple levels, by preventing the entry of CCR5-dependent (R5) HIV strains and by inhibiting both R5 and CXCR4-dependent HIVs at post-entry level(s). In addition, some toxins possess immunostimulating properties that have been exploited in terms of adjuvancy and induction of specific cytotoxic T lymphocytes responses to different vaccine preparations, including some experimental vaccine against HIV infection. Thus, toxins may represent a relatively unexplored exhibition of powerful biological agents that could either prevent infection or attack HIV-infected cells. .COPYRGT. 2005 Bentham Science Publishers Ltd.

L9 ANSWER 8 OF 10 EMBASE COPYRIGHT (c) 2006 Elsevier B.V. All rights reserved on STN

ACCESSION NUMBER: 2005276287 EMBASE
 TITLE: Delivery into cells: Lessons learned from plant and bacterial toxins.
 AUTHOR: Sandvig K.; van Deurs B.
 CORPORATE SOURCE: Prof. K. Sandvig, Institute for Cancer Research, The Norwegian Radium Hospital, University of Oslo, Montebello 0310 Oslo, Norway
 SOURCE: Gene Therapy, (2005) Vol. 12, No. 11, pp. 865-872. . Refs: 85
 ISSN: 0969-7128 CODEN: GETHEC
 COUNTRY: United Kingdom
 DOCUMENT TYPE: Journal; General Review
 FILE SEGMENT: 022 Human Genetics
 029 Clinical Biochemistry
 052 Toxicology
 LANGUAGE: English
 SUMMARY LANGUAGE: English
 ENTRY DATE: Entered STN: 20050707
 Last Updated on STN: 20050707

AB A number of protein toxins of bacterial and plant origin have cytosolic targets, and knowledge about these toxins have provided us with essential information about mechanisms that can be used to gain access to the cytosol as well as detailed knowledge about endocytosis and intracellular sorting. Such toxins include those that have two moieties, one (the B-moiety) that binds to cell surface receptors and another (the A-moiety) with enzymatic activity that enters the cytosol, as well as molecules that only have the enzymatically active moiety and therefore are inefficient in cell entry. The toxins discussed in the present article include bacterial toxins such as **Shiga** toxin and diphtheria toxin, as well as plant toxins such as ricin and ribosome-inactivating proteins without a binding moiety, such as gelonin. Toxins with a binding moiety can be used as vectors to translocate epitopes, intact proteins, and even nucleotides into the cytosol. The toxins fall into two main groups when it comes to cytosolic entry. Some toxins enter from endosomes in response to low endosomal pH, whereas others, including **Shiga** toxin and ricin, are transported all the way to the Golgi apparatus and the ER before they are translocated to the cytosol. Plant proteins such as gelonin that are without a binding moiety are taken up only by fluid-phase endocytosis, and

normally they have a low toxicity. However, they can be used to test for disruption of endosomal membranes leading to cytosolic access of internalized molecules. Similarly to toxins with a binding moiety they are highly toxic when reaching the cytosol, thereby providing the investigator with an efficient tool to study endosomal disruption and induced transport to the cytosol. In conclusion, the protein toxins are useful tools to study transport and cytosolic translocation, and they can be used as vectors for transport to the interior of the cell. .COPYRGT. 2005 Nature Publishing Group All rights reserved.

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ACCESSION NUMBER: 2005096086 EMBASE
TITLE: Ribosome inactivating proteins and apoptosis.
AUTHOR: Narayanan S.; Surendranath K.; Bora N.; Surolia A.; Karande A.A.
CORPORATE SOURCE: A.A. Karande, Department of Biochemistry, Indian Institute of Science, Bangalore 560012, India.
anjali@biochem.iisc.ernet.in
SOURCE: FEBS Letters, (28 Feb 2005) Vol. 579, No. 6, pp. 1324-1331.
Refs: 47
ISSN: 0014-5793 CODEN: FEBLAL
COUNTRY: Netherlands
DOCUMENT TYPE: Journal; (Short Survey)
FILE SEGMENT: 030 Pharmacology
037 Drug Literature Index
LANGUAGE: English
SUMMARY LANGUAGE: English
ENTRY DATE: Entered STN: 20050317
Last Updated on STN: 20050317

AB Ribosome inactivating proteins (RIPs) are protein toxins that are of plant or microbial origin that inhibit protein synthesis by inactivating ribosomes. Recent studies suggest that RIPs are also capable of inducing cell death by apoptosis. Though many reports are available on cell death induced by RIPs, the mechanism involved is not well studied. Comparison of pathways of apoptosis and cellular events induced by various RIPs suggests a central role played by mitochondria, probably acting as an integrator of cellular stress and cell death. The purpose of this **review** is to compare the various apoptotic pathways that may be involved and propose a general pathway in RIP-induced cell death. .COPYRGT. 2005 Federation of European Biochemical Societies. Published by Elsevier B.V. All rights reserved.

L9 ANSWER 10 OF 10 EMBASE COPYRIGHT (c) 2006 Elsevier B.V. All rights reserved on STN

ACCESSION NUMBER: 2004277127 EMBASE
TITLE: Cytotoxicity and toxicity to animals and humans of ribosome-inactivating proteins.
AUTHOR: Battelli M.G.
CORPORATE SOURCE: M.G. Battelli, Diplo. di Patologia Sperimentale, Alma Mater Studiorum, University of Bologna, Via San Giacomo 14, I-40126 Bologna, Italy. mgbatt@alma.unibo.it
SOURCE: Mini-Reviews in Medicinal Chemistry, (2004) Vol. 4, No. 5, pp. 513-521. .
Refs: 154
ISSN: 1389-5575 CODEN: MMCIAE
COUNTRY: Netherlands
DOCUMENT TYPE: Journal; General Review
FILE SEGMENT: 005 General Pathology and Pathological Anatomy
029 Clinical Biochemistry
030 Pharmacology

037 Drug Literature Index
038 Adverse Reactions Titles
052 Toxicology

LANGUAGE: English
SUMMARY LANGUAGE: English
ENTRY DATE: Entered STN: 20040715
Last Updated on STN: 20040715

AB The toxicity to cells and animals of type 1 and toxic and non-toxic type 2 Ribosome-Inactivating Proteins (RIP) is discussed in correlation with their catalytic activity, resulting in ribosome inactivation and apoptosis. The symptoms and histopathological lesions induced by RIP to animals and humans is also reviewed. .COPYRGT. 2004 Bentham Science Publishers Ltd.

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(FILE 'HOME' ENTERED AT 17:31:30 ON 13 FEB 2006)

FILE 'MEDLINE, BIOSIS, CAPLUS, EMBASE, WPIDS' ENTERED AT 17:32:17 ON 13 FEB 2006

L1 3699 RIBOSOME (W) INACTIVATING (W) PROTEIN
L2 171 REVIEW AND L1
L3 0 HETEROMERIC AND L2

FILE 'STNGUIDE' ENTERED AT 17:34:52 ON 13 FEB 2006

L4 0 RIBOSOME (W) INACTIVATING (W) PROTEIN

FILE 'MEDLINE, BIOSIS, CAPLUS, EMBASE, WPIDS' ENTERED AT 17:37:10 ON 13 FEB 2006

L5 7 SUBUNIT AND L2
L6 5 SHIGA AND L2
L7 1 L5 AND L6

FILE 'STNGUIDE' ENTERED AT 17:38:37 ON 13 FEB 2006

FILE 'MEDLINE, BIOSIS, CAPLUS, EMBASE, WPIDS' ENTERED AT 17:41:26 ON 13 FEB 2006

L8 11 L5 OR L6
L9 10 L8 NOT L7

=> t ti l5 1-7

L5 ANSWER 1 OF 7 CAPLUS COPYRIGHT 2006 ACS on STN

TI **Ribosome inactivating protein** and its application in plant anti-fungal disease genetic engineering

L5 ANSWER 2 OF 7 CAPLUS COPYRIGHT 2006 ACS on STN

TI The enemy within: ricin and plant cells

L5 ANSWER 3 OF 7 CAPLUS COPYRIGHT 2006 ACS on STN

TI Jasmonates - secondary messengers in plant defense and stress reactions

L5 ANSWER 4 OF 7 CAPLUS COPYRIGHT 2006 ACS on STN

TI Enzymic properties of ribosome-inactivating proteins (RIPs) and related toxins

L5 ANSWER 5 OF 7 CAPLUS COPYRIGHT 2006 ACS on STN

TI **Ribosome-inactivating protein** from plant

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TI Cytotoxic ribosome-inactivating lectins from plants.
L5 ANSWER 7 OF 7 EMBASE COPYRIGHT (c) 2006 Elsevier B.V. All rights reserved on STN
TI Cytotoxicity and toxicity to animals and humans of ribosome-inactivating proteins.

=> t ti l6 1-5

L6 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN
TI Molecular mechanism of action of ribotoxins
L6 ANSWER 2 OF 5 EMBASE COPYRIGHT (c) 2006 Elsevier B.V. All rights reserved on STN
TI Bacterial toxins: Potential weapons against HIV infection.
L6 ANSWER 3 OF 5 EMBASE COPYRIGHT (c) 2006 Elsevier B.V. All rights reserved on STN
TI Delivery into cells: Lessons learned from plant and bacterial toxins.
L6 ANSWER 4 OF 5 EMBASE COPYRIGHT (c) 2006 Elsevier B.V. All rights reserved on STN
TI Ribosome inactivating proteins and apoptosis.
L6 ANSWER 5 OF 5 EMBASE COPYRIGHT (c) 2006 Elsevier B.V. All rights reserved on STN
TI Cytotoxic ribosome-inactivating lectins from plants.

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